Request for Expression of Interest: Individual Consultancy Services for Feasibility Studies on Irrigation Infrastructure in Fahngonda, Kakata, Meleki, and a Proposed New Scheme in Sahnpa under the Rural Economic Transformation Project (RETRAP)

Credit No./Project No.: P175263

Ref: LR-PMU-MOA-511497-CS-INDV

The Government of Liberia through the Ministry of Agriculture has received additional credits in the amount of 30 million from the IDA Crisis Response Window – Early Response Financing CRW-ERF as additional financing (AF) to the Republic of Liberia for the Rural Economic Transformation Project (RETRAP) and intends to apply part of the proceeds toward payments under the contract for Individual Consultancy Services for Feasibility Studies on Irrigation Infrastructure in Fahngonda, Kakata, Meleki, and a Proposed New Scheme in Sahnpa under the Rural Economic Transformation Project (RETRAP).

1.0 Background

Rice farming is a critical pillar of food security and rural livelihoods in Liberia. It serves as both a staple food source and a key income-generating activity for smallholder farmers. However, rice production across the country remains vulnerable due to the widespread reliance on rain-fed agriculture. Seasonal rainfall variability often leads to crop failure, reduced yields, and economic hardship for farming communities.

The lack of reliable irrigation infrastructure is a major constraint. Many existing systems—including dams, canals, bunds, and water control structures—have deteriorated significantly due to age, poor maintenance, and climate-related disruptions. As a result, water distribution is inefficient, and farmers are unable to cultivate rice consistently throughout the year.
To address these challenges, the Government of Liberia, with support from the World Bank, is implementing the **Rural Economic Transformation Project (RETRAP)**. Under Component 5, RETRAP prioritizes rehabilitating agricultural infrastructure to boost productivity, enhance food security, and promote climate-resilient farming systems. As part of this initiative, four priority sites have been identified for technical and financial assessment:

- **Fahngonda**: Rice farming is essential to the local economy, but productivity is hampered by inadequate irrigation and underdeveloped farm infrastructure. This assignment will evaluate options for improving water management and farm readiness.

- **Kakata, Margibi County**: The irrigation system is severely degraded. Collapsed canals and broken water control structures have rendered the system inefficient and unreliable.

- **Meleki, Bong County**: The central dam and associated water channels are in poor condition. Their inability to retain and distribute water effectively exposes farmers to droughts and floods.

- **Sahnpa, Nimba County**: Farmers currently depend entirely on rainfall. A new irrigation scheme is proposed to provide a consistent water supply, enabling year-round rice cultivation for the first time.

1.1 Objective of the Assignment

The objective of this assignment is to engage qualified consultants to conduct comprehensive feasibility studies for irrigation infrastructure at four priority rice-producing sites in Liberia—Fahngonda, Kakata, Meleki, and Sahnpa—under the Rural Economic Transformation Project (RETRAP).

1.2 Summary of Scope of Services

- **Undertake detailed technical assessments** of existing irrigation systems in Fahngonda, Kakata, and Meleki, and evaluate the potential for a new irrigation scheme in Sahnpa capturing land suitability, water availability, existing infrastructure conditions and community needs.
- **Develop engineering designs and rehabilitation plans** that are practical, cost-effective, and climate-resilient, tailored to the specific needs and conditions of each site.

- **Ensure environmental and social safeguard compliance**, including screening for potential impacts, proposing mitigation measures, and aligning with national and World Bank safeguard policies.
- **Prepare comprehensive cost estimates and investment plans** to guide future implementation, budgeting, and resource mobilization.

The ultimate goal is to restore and expand irrigation infrastructure to support year-round rice cultivation, enhance agricultural productivity, improve rural livelihoods, and strengthen national food security.

2.0 The Ministry of Agriculture now invites eligible individual consultants to indicate their interest in performing the Services. Interested Individual Consultants should provide **an updated Curriculum Vitae (CV), evidence of past Performance in Similar Assignments, and relevant documents** indicating that they have the required qualifications and relevant experience to perform the Services.

The shortlisting criteria include the following:

2.1 MINIMUM QUALIFICATIONS AND EXPERIENCE:

To be eligible for this consultancy, the individual must meet the following criteria:

2.1.1 Educational Qualifications

- A minimum of a Bachelor's degree in Civil Engineering, Water Resources Engineering, Irrigation Engineering, or a closely related field.

- A Master's degree in any of the above disciplines will be considered an added advantage.

2.1.2 Professional Experience

- At least **5 years** of progressive experience in the design, assessment, and rehabilitation of water infrastructure, particularly dams and irrigation systems.
- Demonstrated experience conducting **feasibility studies** and preparing **engineering designs** for rural water or irrigation projects.
- Familiarity with **environmental and social safeguard frameworks**, including national regulations and international standards (e.g., World Bank, AfDB, or similar).

Technical Skills and other Requirements

- Proficiency in engineering design software (e.g., AutoCAD, Civil 3D, HEC-RAS, or equivalent).
- Strong analytical and report-writing skills.
- Ability to conduct field assessments in remote or rural settings.
- Excellent communication and stakeholder engagement skills.
- Fluency in English (spoken and written).
- Willingness to travel to Fahngonda, Kakata, Meleki, and Sahnpa work closely with local communities and project teams.

The detailed Terms of Reference (TOR) for the assignment can be found at the following websites:

a) https://vacancies & Career Opportunities | Ministry of Agriculture (www.moa.gov.lr)
b) Request directly via email from: dkulah@moa.gov.lr/ retrapbids@moa.gov.lr

The attention of interested individual Consultants is drawn to Section III, paragraphs 3.14, 3.16, and 3.17 of the World Bank's "Procurement Regulations for IPF Borrowers" dated July 2016, revised November 2017, and August 2018, November 2020, September 2023 and February 2025 and, setting forth the World Bank's policy on conflict of interest. Please refer to *paragraph 3.17 of the Procurement Regulations* on conflict of interest related to this assignment which is available on the Bank's website at http://projects-beta.worldbank.org/en/projects-operations/products-and-services/brief/procurement-new-framework. An Individual Consultant will be selected in accordance with the **Individual Consultant Selection (ICS)** method set out in the Procurement Regulations.

3.0 Expressions of interest must be submitted electronically in a format that cannot be altered (PDF format is preferred) to the email address below by **Thursday, 30th October 2025 @ 5:00 pm Monrovia time.**

Note: All Expression of Interests MUST include at least three (3) references with their names, telephone numbers, and email addresses; curriculum vitae(CV) with a copy of educational credentials (degrees, training certificates, etc), and be submitted to the below email address:

Galah Toto
Project Coordinator, RETRAP
Somalia Drive, Gardnersville, Monrovia, Liberia
Tel +231-777576980
Email: retrapbids@moa.gov.lr with a copy to Email: gtoto@moa.gov.lr

THE WORLD BANK
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WORLD BANK/IFAD PROGRAM IMPLEMENTATION UNIT
MINISTRY OF AGRICULTURE, REPUBLIC OF LIBERIA
RURAL ECONOMIC TRANSFORMATION PROJECT (RETRAP)
1st Floor LIBSUCO Building Japan Freeway (Formerly Somalia Drive),
Gardnersville – Monrovia, Liberia

TERMS OF REFERENCE

Consultancy Services for Feasibility Studies on Irrigation Infrastructure in Fahngonda, Kakata, Meleki, and a Proposed New Scheme in Sahnpa under the Rural Economic Transformation Project (RETRAP)

BACKGROUND

Rice farming is a critical pillar of food security and rural livelihoods in Liberia. It serves as both a staple food source and a key income-generating activity for smallholder farmers. However, rice production across the country remains vulnerable due to the widespread reliance on rain-fed agriculture. Seasonal rainfall variability often leads to crop failure, reduced yields, and economic hardship for farming communities.

The lack of reliable irrigation infrastructure is a major constraint. Many existing systems—including dams, canals, bunds, and water control structures—have deteriorated significantly due to age, poor maintenance, and climate-related disruptions. As a result, water distribution is inefficient, and farmers are unable to cultivate rice consistently throughout the year.

To address these challenges, the Government of Liberia, with support from the World Bank, is implementing the **Rural Economic Transformation Project (RETRAP)**. Under Component 5, RETRAP priorities rehabilitating agricultural infrastructure to boost productivity, enhance food security, and promote climate-resilient farming systems.

As part of this initiative, four priority sites have been identified for technical and financial assessment:

- **Fahngonda**: Rice farming is essential to the local economy, but productivity is hampered by inadequate irrigation and underdeveloped farm infrastructure. This assignment will evaluate options for improving water management and farm readiness.

- **Kakata, Margibi County**: The irrigation system is severely degraded. Collapsed canals and broken water control structures have rendered the system inefficient and unreliable.

- **Meleki, Bong County**: The central dam and associated water channels are in poor condition. Their inability to retain and distribute water effectively exposes farmers to droughts and floods.

- **Sahnpa, Nimba County**: Farmers currently depend entirely on rainfall. A new irrigation scheme is proposed to provide a consistent water supply, enabling year-round rice cultivation for the first time.

The objective of this assignment is to engage qualified experts to conduct comprehensive feasibility studies at each site. These studies will assess land suitability, water availability, infrastructure conditions, and community needs. Based on these findings, the consultants will develop practical, cost-effective, and climate-resilient designs to rehabilitate existing systems in Fahngonda, Kakata, and Meleki, and establish a new scheme in Sahnpa.

By restoring and expanding irrigation infrastructure, this effort aims to empower farmers with reliable access to water, boost rice production, increase household incomes, and contribute to national food security.

OBJECTIVE OF THE ASSIGNMENT

The objective of this assignment is to engage qualified consultants to conduct comprehensive feasibility studies for irrigation infrastructure at four priority rice-producing sites in Liberia—Fahngonda, Kakata, Meleki, and Sahnpa—under the Rural Economic Transformation Project (RETRAP).

Specifically, the assignment will:

- **Undertake detailed technical assessments** of existing irrigation systems in Fahngonda, Kakata, and Meleki, and evaluate the potential for a new irrigation scheme in Sahnpa capturing land suitability, water availability, existing infrastructure conditions and community needs.
- **Develop engineering designs and rehabilitation plans** that are practical, cost-effective, and climate-resilient, tailored to the specific needs and conditions of each site.

- **Ensure environmental and social safeguard compliance**, including screening for potential impacts, proposing mitigation measures, and aligning with national and World Bank safeguard policies.
- **Prepare comprehensive cost estimates and investment plans** to guide future implementation, budgeting, and resource mobilization.

The ultimate goal is to restore and expand irrigation infrastructure to support year-round rice cultivation, enhance agricultural productivity, improve rural livelihoods, and strengthen national food security.

SCOPE OF THE ASSIGNMENT

The scope of the assignment for the four sites shall include but not limited to the followings:

1. **Fahngonda:**

Field Assessment

- Conduct site visits to inspect existing irrigation and farm infrastructure on a land situated in Lofa County covering 400 hectares.
- Engage with local farmers and stakeholders to gather insights.

Technical Evaluation

- Assess the adequacy of current irrigation systems for rice cultivation.
- Identify gaps and constraints in water distribution, drainage, and land levelling.

Design Development

- Prepare conceptual designs for:
    - Irrigation canals (primary and secondary)
    - Bunds and sluice gates
    - Inlets and outlets
    - Farm access paths and plot layouts
- Ensure designs support efficient water use.

Financial Analysis

- Generate itemized cost estimates for infrastructure rehabilitation and land preparation.
- Include labor, materials, equipment, and contingency costs.

Reporting

- Compile findings into a comprehensive technical report.
- Include design sketches, cost tables, feasibility conclusions, and strategic recommendations.
- Present the report to the client and incorporate feedback.

2. **Kakata:**

Site Assessment

- Conduct field visits to inspect the condition of head dykes, canals, bunds, and water control structures.
- Collect relevant hydrological, topographical, and environmental data.

Technical Evaluation

- Analyse the structural integrity and operational efficiency of all existing irrigation infrastructure located at the World Bank Swamp – Kakata, Margibi County covering 31.15 hectares
- Identify areas requiring rehabilitation or redesign.

Design Development

- Prepare preliminary and detailed engineering designs for rehabilitation works.
- Include architectural layouts, technical drawings, and bills of quantities.

Environmental and Social Impact Assessment (ESIA)

- Conduct a comprehensive ESIA in line with national and international standards.
- Identify potential risks and propose mitigation measures.

Environmental and Social Management Plan (ESMP)

- Develop an ESMP outlining mitigation strategies, monitoring frameworks, and institutional responsibilities.
- Ensure alignment with donor safeguard policies and national regulations.

3. Meleki:

Site Inspection & Data Collection:

- Conduct field visits to assess the current condition of the dam, canals, bunds, and associated structures. Collect relevant existing information/data to support system restoration in line with environmental compliances

Technical Evaluation:

- Analyse the structural integrity of the dam embankment, spillways, canals, and water control systems located at Meleki – Bong County covering 60.5 hectares. Assess functionality, safety, and capacity.

Damage Mapping & Documentation:

- Identify and document all visible and latent structural damages, including erosion, sedimentation, leakage, and access limitations.

Design Recommendations:

- Develop engineering designs and technical specifications for rehabilitation works, incorporating climate-resilient and environmentally sound solutions.

Feasibility Analysis:

- Evaluate the technical, environmental, and social feasibility of proposed interventions. Include cost estimates and implementation timelines.

Safeguard Integration:

- Ensure that all proposed designs and activities comply with national and international environmental and social safeguard standards.

4. Sahnpa:

a) Technical Feasibility:

- **Water Source & Availability:** Study the proposed river/stream. Measure how much water is available throughout the year (dry and wet seasons). Check if there is enough water for the scheme without harming other users downstream.
- **Headworks (Intake & Dyke):** Propose the best design and location for the main head dyke (weir) and intake structure to divert water into the canal. The scheme is to cover 400 hectares of land situated in Sahnpa, Nimba County.
- **Canal System Design:**
    - **Main Canal:** Design the route, size, and slope of the main canal that carries water from the intake.
    - **Minor Canals (Laterals):** Design the network of smaller canals that branch off from the main canal to deliver water to different blocks of the farm.

- **Structures:** Design necessary structures like culverts (for roads crossing canals), drops (for steep slopes), and division boxes (to control water flow).

- **Field Layout:** Design the layout of the rice fields, including their size, shape, and how they will be leveled for even water distribution.
- **Drainage:** Plan a drainage system (channels to remove excess water from the fields) to prevent waterlogging.
- **Construction Materials:** Identify local sources of materials like stones, sand, and gravel for construction.

b) Environmental and Social Feasibility:

- **Environmental Impact:** Identify potential negative impacts on the environment (e.g., on fish, water quality, nearby forests) and propose measures to avoid or reduce them.
- **Social Impact:** Identify people living on the proposed land. Assess how the project will affect them. Provide mitigating measures

c) Economic Feasibility:

- **Cost Estimation:** Calculate the total cost of constructing the entire scheme.
- **Benefits Analysis:** Estimate the expected increase in rice production and income for farmers.
- **Cost-Benefit Analysis:** Compare the total costs to the total benefits to see if the project makes financial sense.

EXPECTED DELIVERABLES:

The consultant shall submit the following deliverables for the four sites

FAHNGONDA, KAKATA & MELEKI:		
Deliverable	**Description**	**Timeline**
Inception Report	Work plan, methodology, and schedule	0.5 Week
Site Assessment Report	Detailed findings from field inspections and technical evaluations	1 Weeks
Damage & Deficiency Map	Visual and written documentation of structural issues	1 Week
Engineering Design Package	Technical drawings, specifications, and bill of quantities	1 Weeks
Feasibility Study Report	Comprehensive analysis of proposed rehabilitation works	0.5 Week
Safeguard Compliance Report	Environmental and social impact assessment summary	0.5 Week
Final Consultancy Report	Consolidated report including all deliverables and recommendations	0.5 Week
	Total Weeks	**5 Weeks**
SAHNPA:		
Deliverable	**Description**	**Timeline**
Inception Report	Outlines the consultant's understanding of the assignment, proposed methodology, work plan, schedule, and team composition.	0.5 Week
Draft Feasibility Study Report	Comprehensive draft covering technical, environmental, social, and economic aspects. Includes maps, drawings, and initial findings based on field assessments and stakeholder consultations.	2 Weeks
Final Feasibility Study Report	Final report incorporating feedback. Includes: Executive Summary, Feasibility conclusion, Detailed technical designs and drawings, Environmental and	0.5 Week

	Social Management Plan, Cost estimates and economic analysis, Recommendations for next steps	
	Total Weeks	**3 Weeks**

Duration of the consultancy: 8 weeks or 2 months.

MINIMUM QUALIFICATIONS AND EXPERIENCE:

To be eligible for this consultancy, the individual must meet the following criteria:

Educational Qualifications

- A minimum of a Bachelor's degree in Civil Engineering, Water Resources Engineering, Irrigation Engineering, or a closely related field.

- A Master's degree in any of the above disciplines will be considered an added advantage.

Professional Experience

- At least **5 years** of progressive experience in the design, assessment, and rehabilitation of water infrastructure, particularly dams and irrigation systems.

- Demonstrated experience conducting **feasibility studies** and preparing **engineering designs** for rural water or irrigation projects.

- Familiarity with **environmental and social safeguard frameworks**, including national regulations and international standards (e.g., World Bank, AfDB, or similar).

Technical Skills

- Proficiency in engineering design software (e.g., AutoCAD, Civil 3D, HEC-RAS, or equivalent).
- Strong analytical and report-writing skills.
- Ability to conduct field assessments in remote or rural settings.

Other Requirements

- Excellent communication and stakeholder engagement skills.
- Fluency in English (spoken and written).
- Willingness to travel to Fahngonda, Kakata, Meleki, and Sahnpa work closely with local communities and project teams.

EXPECTED OUTCOMES

Upon successful completion of the assignment it is expected that the following will result in:

Comprehensive Feasibility Study Report: A detailed and technically sound report outlining the current condition of the dam and associated irrigation infrastructure, including structural assessments, environmental considerations, and social impacts.

Clear Rehabilitation Roadmap: A practical and prioritized plan for rehabilitating the dam, canals, bunds, and water control structures, complete with engineering designs, cost estimates, and implementation timelines.

Climate-Resilient and Sustainable Solutions: Integration of environmentally sound and climate-adaptive engineering approaches that enhance long-term functionality and resilience of the irrigation system.

Technical Design Package: Delivery of engineering drawings, specifications, and bills of quantities for all recommended rehabilitation works.

Safeguard Compliance Documentation: Submission of environmental and social safeguard assessments aligned with national and international standards, ensuring responsible and inclusive infrastructure development.